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AUTHOR Burg, Blanka
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ABSTRACT

The pamphlet presents the policy of Israel's Ministry of Education and Culture for education of gifted children and science-oriented youth, and highlights the range of programs available for these students. The administrative structure of the Ministry's Department for Gifted Children and Science Oriented Youth is briefly introduced, and the historical background of gifted education is reviewed. The pamphlet offers a description of the Department's role, definitions of giftedness, testing procedures, curriculum options, programs including enrichment programs, staffing, associations, and courses for Arab and Druze pupils. Also described are courses for science-oriented youth, offered in the following institutions of higher education for the enrichment and advancement of elementary/secondary students: Bar Ilan University, Ben Gurion University, Hebrew University of Jerusalem, Israel Institute of Technology, Tel Aviv University, Volcani Center of the Agricultural Research Authority, and the Weizmann Institute. Several other college, institute, and museum programs are briefly noted. (JDD)

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GIFTED CHILDREN AND SCIENCE ORIENTED YOUTH

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THE MINISTRY OF EDUCATION AND CULTURE
THE PEDAGOGICAL SECRETARIAT
THE DEPARTMENT FOR GIFTED CHILDREN
AND SCIENCE ORIENTED YOUTH

GIFTED CHILDREN AND SCIENCE ORIENTED YOUTH

INFORMATION BOOKLET



JERUSALEM 1989

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**STATE OF ISRAEL
MINISTRY OF EDUCATION AND CULTURE
THE PEDAGOGICAL SECRETARIAT
THE DEPARTMENT FOR GIFTED CHILDREN AND SCIENCE
ORIENTED YOUTH**

The need for this booklet was prompted by a growing interest in gifted children, not only on the part of those who work with the gifted population, but also by the general public.

This publication presents the policy of the Ministry of Education and Culture, and highlights the range of programs available for gifted children and science oriented youth.

I wish to thank all those in the Ministry who gave their assistance in producing this booklet. In particular, my thanks go to Mrs. Nitza Shachal for her participation in writing the Hebrew version of this publication.

Dr. Blanka Burg
Director of the Department



STATE OF ISRAEL
Deputy Prime Minister
and Minister of Education and Culture

Ensuring the well being of our future generations requires creative and varied solutions for the unique needs of students on the part of the educational system.

The educational system fulfills the value of equality which provides education to all, and it answers the need for achievement which expresses itself in nurturing the unique talent of every pupil according to his ability.

The promotion of excellence should be a goal — but it should also create awareness among the gifted of the necessity to be active contributors to the society in which they live.

Since assuming the portfolio of Minister of Education and Culture I see this issue as one of the main targets of our educational system, and we have substantially increased our budget for this purpose.

We must continue to promote the gifted child in order to make him a well-rounded person, with accomplishments in the intellectual, artistic, creative and cultural areas, and ensure that he possesses a high level of awareness with respect to his social role.

A handwritten signature in dark ink, appearing to read 'Y. Navon'.

Yitzhak Navon

**STATE OF ISRAEL
MINISTRY OF EDUCATION AND CULTURE
THE PEDAGOGICAL SECRETARIAT**

An important and indispensable task of the educational system is to develop and nurture gifted and talented individuals. It has been said more than once that our primary natural resource is our human resource, and this is especially so regarding the resource of talented people who excel in their intelligence, creativity and imagination.

Given this, our educational system has sought to foster two goals as one: excellence and equality. Our aim is to cultivate excellence in each child, to create conditions for developing and utilizing each child's abilities to the fullest. It is our belief that each child has his own potential that should be developed and enhanced.

In the past year, the Pedagogical Secretariat held a series of discussions on this subject. Recommendations and decisions were made by the Minister of Education and Culture and the Ministry Executive. Decisions taken as a result of these discussions are included in this booklet.

David Pur
Chairman
Pedagogical Secretariat

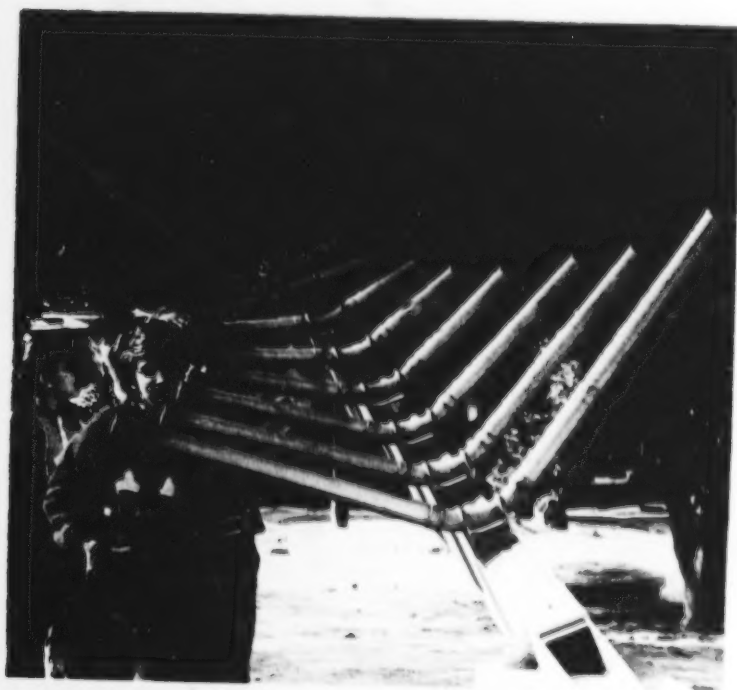
INTRODUCTION

The Department for Gifted Children and Science Oriented Youth is part of the centralized educational system in Israel and operates within the Pedagogical Secretariat of the Ministry of Education and Culture.

The Department is responsible for all matters relating to gifted children and science oriented youth throughout the State, and supervises the implementation and operation of all associated programs, including the pedagogical, organizational and budgetary aspects.

In conjunction with the Department there is a steering committee appointed by the Minister of Education and Culture. Its function is to discuss the educational policy toward the gifted and advise the Department staff on its activities. The staff in the Department maintains contact with the principals of schools in which programs for the gifted are offered. Visits to the schools are made and meetings held with teachers, pupils and parents.

Implementation of these programs for the gifted is carried out by the Department staff together with school advisors, inspectors, district educational directors, and department heads in the Ministry of Education and Culture. In addition, the Department for the Gifted coordinates enrichment programs with local educational authorities, universities, professionals and institutions of higher education in Israel and abroad.



Science Garden, Weizmann Institute

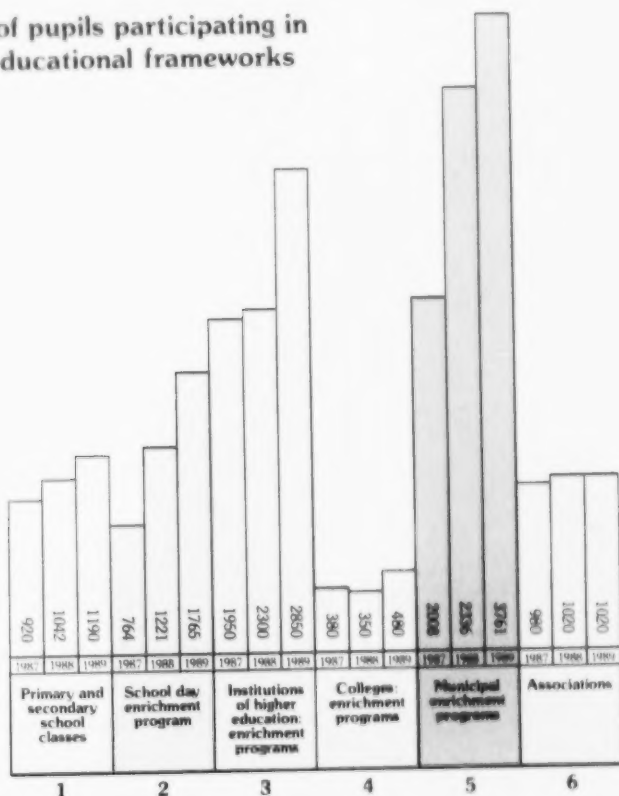
HISTORICAL BACKGROUND

Formerly, as a result of the strong egalitarian educational philosophy in Israel, education was perceived to be equal for all, and no special frameworks for the gifted were available.

It was in the institutions of higher education, in the Faculty of Mathematics in the Technion (Israel Institute of Technology, Haifa) and the Tel Aviv University (School of Mathematics) that gifted pupils began to receive personal assistance and guidance as well as enrichment courses.

With the expansion and formalization of these enrichment courses, in 1970-71 the Ministry of Education and Culture appointed a committee whose task was to establish future policies for the gifted. This committee recommended that financial support be allocated to the institutions of higher education to assist in the development of educational programs for the gifted, and also advised that a department responsible for gifted children throughout the country be established within the Ministry. In Tel Aviv and Haifa classes of about 25 gifted pupils each were opened on an experimental basis in regular schools, and since 1973 the Department has dealt with 20,000 pupils through its various educational frameworks.

Numbers of pupils participating in different educational frameworks



THE POLICY

Interest in the gifted was officially promoted in the 1970's when the Minister of Education and Culture at that time presented his educational policy by declaring that attention should be given to the education of the gifted.

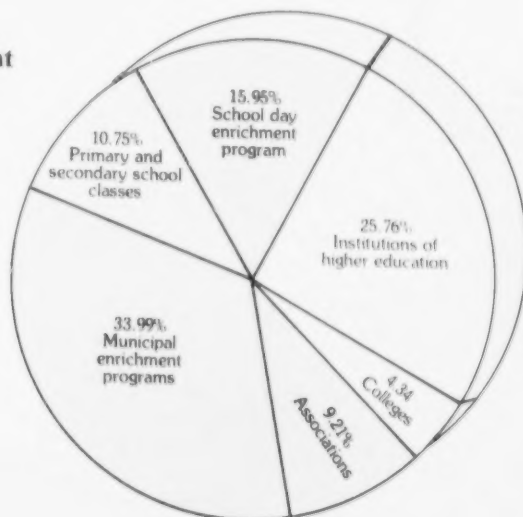
Today, Mr. Yizhak Navon, Deputy Prime Minister and Minister of Education and Culture, has stressed the need to develop the potential found in every pupil. The Minister pointed out that each child has the right to explore and expand his special abilities and that it is the task of the educational system to provide the appropriate framework and tools to achieve such fulfillment. On October 17th, 1988, the Minister of Education and Culture headed a meeting of the Ministry Executive to explore possible directions for advancing the education of gifted pupils. At the conclusion of the discussion, the policy was defined as follows:

The educational system will provide gifted pupils with the best possible education suited to their talents and qualifications while maintaining as a guide the values of equality and democracy in Israeli society.

The Minister of Education and Culture set three principles for his educational policy:

1. Attention to gifted pupils will continue in an intensive and innovative manner while the best possible conditions for developing these children's talents will be provided.
2. The Israeli educational system aims to provide conditions in which all children will be able to fulfill their potential, their best abilities and talents. Schools will be given direction on how to prepare themselves pedagogically to achieve this goal.
3. The policy of integration will continue and its implementation will be carried out by all means available to the system.

**Division by Percentage
of Participants in Different
Educational Frameworks**

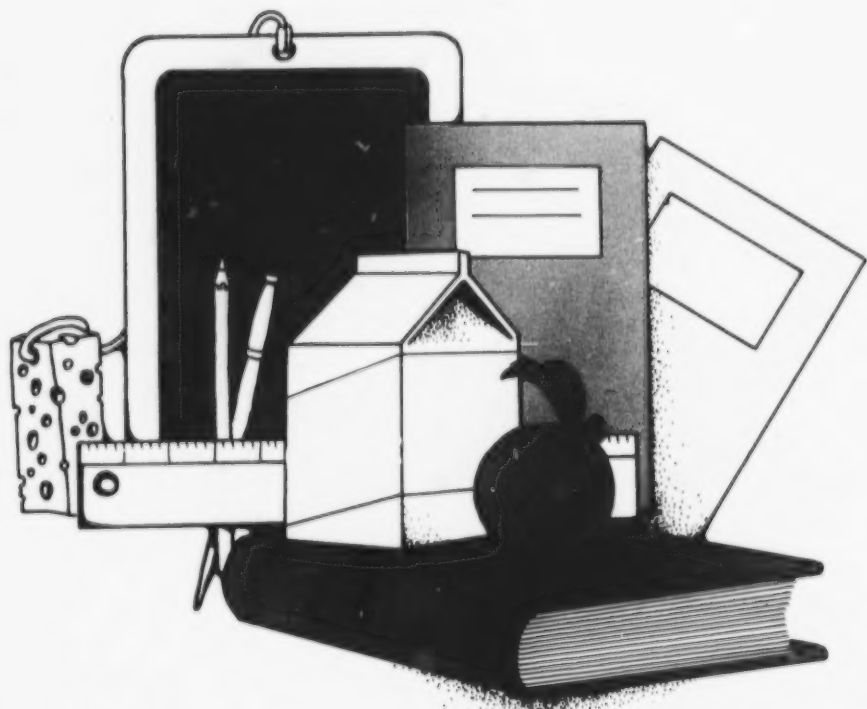


THE ROLE OF THE DEPARTMENT

The role of the Department for Gifted and Science Oriented Youth is to create an educational environment suitable to the talents and abilities of each gifted child in Israel, from grade 3 through grade 12.

The intention is to foster the pupils' talents and develop their individual ability, both for themselves as well as for their contribution to the society in which they live. Fostering talents implies the development of a child's intellectual capacity - both abstract and generalized thinking. The Department seeks to identify the most talented pupils, to enhance the teachers' understanding of the needs of the gifted in the classroom, and to supply subject matter for special classes and enrichment centers.

The Department's work in encouraging the advancement of these students encompasses different populations and areas throughout the country.



DEFINITION OF THE GIFTED

In the 78th Yearbook of the National Society for the Study of Education (Chicago 1979, p. 30) there appears a definition which was included in Federal Legislation: "Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas:

1. General intellectual ability.
2. Specific academic aptitude.
3. Creative or productive thinking.
4. Leadership ability.
5. Visual and performing arts.
6. Psychomotor ability."

The Ministry of Education and Culture adopted the most accepted definition of giftedness which relates specifically to a child's intellectual or special academic abilities in the humanities and sciences.

The accepted definition held today in the Ministry is one-dimensional, based upon intellectual and cognitive achievements. The definition received the approval of a committee of experts headed by the Scientific Advisor of the Ministry at that time. The definition does not relate to the other dimensions of giftedness which appear in the professional literature, such as high performance in creative fields, leadership, performing arts and visual arts. The Ministry Executive decided that a committee of experts would be appointed headed by the Scientific Advisor in order to redefine the concept of giftedness. The committee will be requested to relate to the different innovations and experiences throughout the world, to consider the new approaches of reliable and valid assessment which have been developed, and to refer to the professional literature in this field.

The Department for Gifted Children will continue to work in accordance with the present definition of giftedness until such time as a new definition is accepted.



TESTING

Tests are conducted by the Szold Institute — The National Institute for Research in the Behavioral Sciences, and funded by the Ministry of Education and Culture. The tests identify general and specific intellectual abilities which characterize gifted children. This process is conducted without the cooperation of local psychological services in order to secure the objectivity of the testing and avoid exerting any pressure on the local services.

The Szold Institute tests approximately 15% of the total population of students who have the highest achievement levels in their classes. These pupils are referred on the basis of a preliminary test given in their schools. This test, created by the Szold Institute, is revised yearly and serves to assist teachers and advisors to objectively determine who comprise the 15% of recommended pupils. Those students who fall between the top 1% and 3% and have the highest performance levels are accepted to the various programs.

If for some reason a child did not participate in the identification process, he or she may turn to the Department for Gifted Children in the Ministry of Education and Culture for consideration of their request to be tested. Each such request is evaluated on the basis of pedagogical considerations.

Decisions of the Ministry Executive Regarding the Definition of the Gifted

1. The Department for Gifted Children will discuss methods for reaching specific populations of potentially gifted pupils who are not identified by means of the present system.
2. Acceptance criteria will be established with continual follow-up of the participating pupils. Pupils will be able to move flexibly into the various programs in different grades.
3. Until such time that a different system of testing is designed, the present system used in the Ministry, which has proved to be reliable, will continue to be used.

Note: The Szold Institute is currently engaged in developing additional approaches for testing gifted pupils.



Curricula Programs

The Frameworks

Today there are 11 types of activity frameworks in the educational system:

1. Special full-time schools with boarding facilities.
2. Special full-time schools without boarding facilities.
3. Full time vocational schools.
4. Special classes on a full-time basis.
5. Special classes on a part-time basis.
6. Instruction of gifted pupils in regular classes.
7. Registration for a high-school and university concurrently.
8. Afternoon classes in colleges and universities for students who have successfully passed the test for general intellectual ability.
9. Afternoon classes in colleges and universities for students who have successfully passed the test for specific academic aptitude.
10. Afternoon classes in public frameworks.
11. Afternoon classes in private frameworks.

The Department for Gifted Children and Science Oriented Youth is not responsible for frameworks 1, 2, 3, and 6.



Graetz School, Tel Aviv

PROGRAMS

In implementing programs in classes, the School Day Enrichment Programs, or afternoon courses, consideration is given to the needs and manpower resources for each program in each specific location. The decision as to which program will be implemented in a given area is made by the local authorities in cooperation with the Department for Gifted Children and Science Oriented Youth, who render professional advice and also are in close cooperation with the inspectors, school principals, teachers and parents.

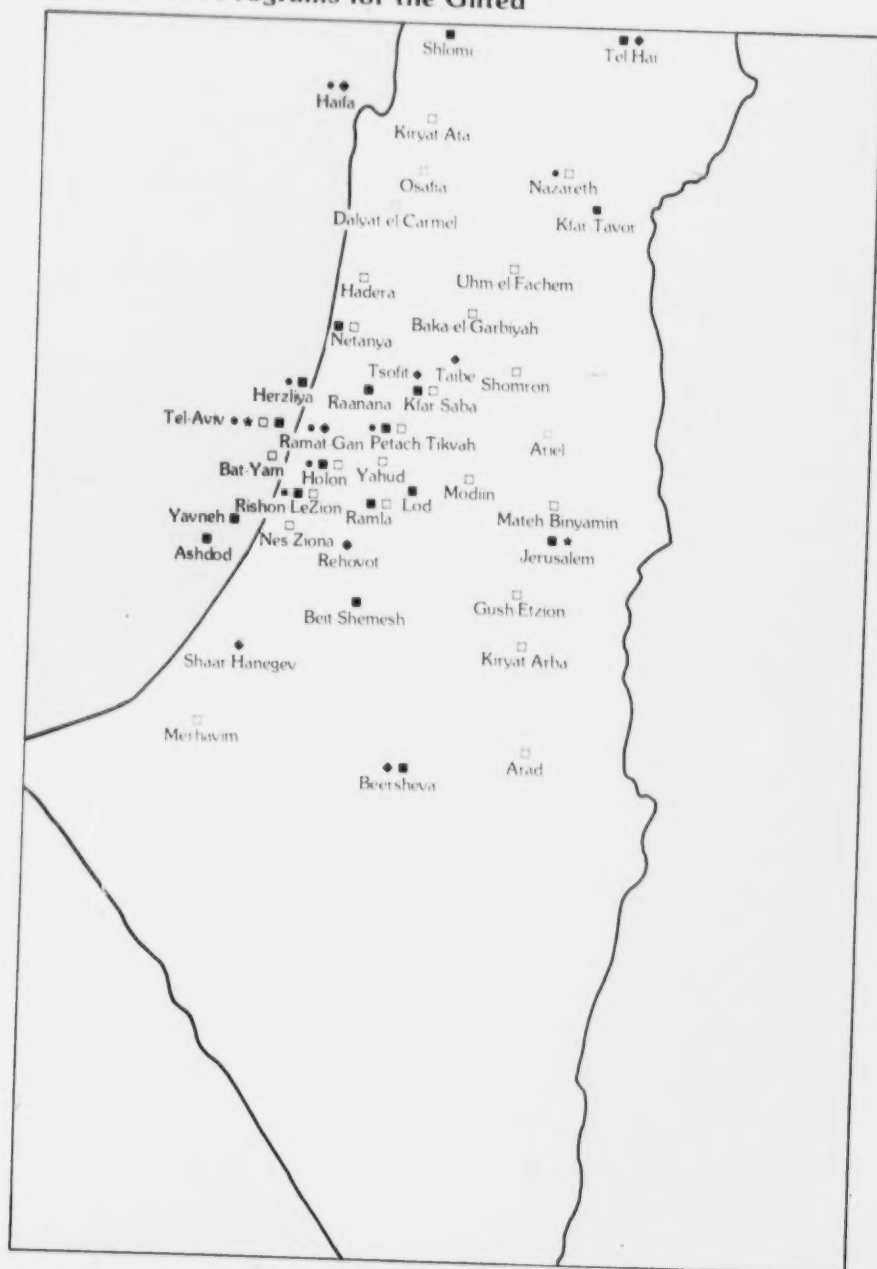
It is the policy of the Department for Gifted Children and Science Oriented Youth that local authorities and parents should work as partners in choosing the options most suited for their children's needs. The Department does not determine the types of programs which different local authorities will implement. The choice is a result of local considerations which have social, political, geographical and economic ramifications.

The Department allocates teaching hours and funds to the various programs, dividing the available resources among them. Its policy is to give preference to opening a program in places where no such activities exist rather than adding programs to those already functioning in some location. In areas distant from institutions of higher education or municipal centers, the Department allocates more resources to facilitate the operation of programs.



Kibbutz Galuyot School, Petach Tikvah

Locations of Programs for the Gifted



- Classes ■ School Day Enrichment ★ Associations □ Municipal Programs
- ◆ Programs in Institutions of Higher Education

DESCRIPTION OF THE FRAMEWORKS CLASSES

The classes for the gifted are conducted within regular district schools and they include about one percent of the total student population in a given town or city. The classes were opened in regular schools in order not to isolate the pupils from their peers and their social activities take place with all the other school children. Starting with two experimental classes in Tel Aviv and Haifa, the programs were extended to Herzliya, Holon, Nazareth, Petach Tikvah, Rishon LeZion, and Ramat Gan.

In most cases the programs begin in the 3rd or 4th grade and continue through the 12th grade. Beginning with the school year 1987 an experiment was conducted to assess the effectiveness of opening classes to children in the 7th, 9th and 10th grades without their having previously studied in special classes and schools. In two locations children study in special classes after they have participated in the School Day Enrichment Program starting in grade 3 (See map).

It should be noted that full time special classes were found to be more efficient for the needs of the gifted pupils and were also found to contribute towards the school's image. The concern that the gifted pupils would experience feelings of superiority and segregation in the schools proved to be unfounded in a position paper issued by the Tel Aviv University.

During discussions by the Ministry Executive regarding the educational policy on classes, the decision was made to encourage the opening of full-time special classes.

The Ministry's Policy on Classes

The policy of the Ministry of Education and Culture does not encourage acceleration of gifted pupils in order to complete high school at a younger age. The Ministry of Education and Culture is concerned not only with the intellectual development of each child, but also places emphasis on the gifted pupils' emotional development and also on their ability to contribute as individuals to society. Although academic achievement is a key component in a gifted pupil's education, that education is not complete without stressing values and moral education. Therefore, the Ministry's preferred policy is to enable pupils to remain in their classes until their matriculation examinations. The class provides a framework to which they belong, enabling them to identify with other children of their own age.

Nevertheless, students with exceptional aptitude, particularly in the area of mathematics, are able to utilize their talents. To this end, the Ministry of Education and Culture, in cooperation with the School of Mathematics at Tel Aviv University, encourages gifted children to study mathematics at the university level. As of the scholastic year 1987, 9th - 11th grade pupils who excel in mathematics may attend a special preparatory course at the University, while studying the remaining subjects in their respective high school classes. Upon successful completion of the course, they become special students at the School for Mathematics at Tel Aviv University.

An effort is made to refer high school pupils to courses given by the Open University, and to personal instruction by researchers at the Weizmann Institute of Science in Rehovot and the Volcani Center for Agricultural Research in Beit Dagan.

THE CURRICULUM

The curriculum is based on the regular course subject matter prescribed by the Ministry of Education and Culture, with the addition of enrichment and in-depth study. That is, a pupil learning in a class for the gifted must be familiar with the course requirements for his age group. What characterizes a classroom for the gifted is the unique make-up of its participants, the level of the studies and the additional teaching hours they receive during the week. In the classes for the gifted, subjects from different fields are integrated. In addition to the teachers, instruction is given by senior lecturers from institutions of higher education. When planning the curriculum, an attempt is made to provide the children with a positive approach to a wide variety of subject matter rather than encourage specialization in one specific area. The emphasis is not only on acquisition of knowledge and understanding, but also on applying the subjects mastered to other fields. The teachers encourage independent thought, originality and divergent thinking. The children learn to research and handle new material on their own, and may take advantage of new avenues of knowledge outside of the school environment which are opened to them, including institutions of higher education, colleges and special centers.

Decisions of the Ministry Executive Regarding the Development of a Curriculum for the Gifted

1. The Ministry will strengthen the ongoing process of new program development for educating gifted children.
2. The Department for Gifted Children will offer enrichment programs for gifted pupils in regular classes as well as in afternoon courses for these children.
3. The Ministry will encourage the application of those programs which have proven to be successful in other countries, such as training programs and vocational specialization, and which may be adaptable to the Israeli educational system.

Future Educational Programs

The increase in activity frameworks demands the development of appropriate programs by the Curriculum Center of the Ministry of Education and Culture in Jerusalem. Additional input is derived from the teachers' experiences in instructing the gifted as they adapt the curriculum to their particular students.

Decisions of the Ministry Executive

1. A center for developing educational programs will be established in the Ministry which will work in cooperation with experts in the field and researchers from the universities. The Department for Gifted Children will decide upon the curriculum and subjects and will ensure that basic standards and an underlying theoretical basis are maintained for all the programs designed according to age level and area of study.

2. The Department for Gifted Children will establish a national resource center of educational programs for teachers.
3. The Department will encourage the development of specialized educational programs, developed by teachers and based on the needs of their students.
4. The Department will acquire appropriate educational programs from abroad and will have them translated into Hebrew.
5. The Department for Gifted Children will see to the development of instruction methods and suitable teaching aids to comply with its unique programs.

THE TEACHERS

In Israel, no special training is offered to teachers of gifted children. The recruitment and acceptance of teachers for classes of the gifted is very rigorous. They should excel not only in their own field of instruction but also have a broad education and knowledge in many spheres of human endeavor. Furthermore, they should be aware of the specific characteristics of gifted pupils. Preference is given to those with teaching experience and who regularly attend teachers' enrichment workshops during the course of their work. These courses are organized by the Department for Gifted Children and Science Oriented Youth. They take place once a month and focus on a defined subject appropriate for a certain age level. The teachers receive guidance on how to develop and expand a subject, and how to transmit it to their students. The courses serve as workshops for teachers, where they can exchange knowledge and experience and construct programs suitable for their classes.

In his book **The Gifted Child**, (Macmillan, 1983) Tannenbaum states that gifted children require teachers who understand the nature of giftedness, who in their special field of knowledge are competent in the different programs, curriculum enrichment, and in the methodology required to implement these programs. A teacher should be a model to his pupils, an example of an educated person, a source of inspiration — but "no teacher can know as much as an aggregate of gifted children in a classroom, whose interests are highly diversified and advanced."

As a result of the Ministry Executive meeting, it was agreed that teachers of the gifted should possess talents and training different from the average teacher. They are expected to be experts in the subject they instruct while at the same time they must have pedagogical qualifications suited to the education of the gifted pupils. The assumption that the best teachers choose to leave regular classes and prefer to teach the gifted has not been validated.

The Decisions of the Ministry Executive Regarding Teachers

1. The Department for Gifted Children in the Ministry of Education and Culture will establish guidelines for accepting teachers for their programs.
2. Given the special attributes of teachers of the gifted, and the fact that they have been recruited primarily from institutions of higher education, it is imperative to use different criteria in determining their salary.
3. An employment center will be established as the Department's responsibility, where candidates will be available for consideration as potential teachers.

4. The Department will continue to hold workshops and arrange study groups for teachers of the gifted. The workshops should be organized according to subject matter, age levels, and activity frameworks.
5. For teachers of regular classes in which there are gifted pupils, the Department for Gifted Children will prepare workshops adapted to the specific needs of these students.

SCHOOL DAY ENRICHMENT PROGRAM

Enrichment programs for the gifted in grades 3 - 9 were launched in locations where it was not feasible to establish special classes. The enrichment program is essentially an educational process through which pupils acquire additional experience and learn new approaches to the sciences, humanities, and arts. This process contributes to broadening a pupil's horizons, experience and imagination.

For a period of five days, the pupils remain in their regular district schools, and once a week attend a center where the program is conducted. The pupils recommended for this course were identified by the Szold Institute test in grade 2 or 3, and belong to the highest percentage of their age group.

The pupils' absence once a week from their regular class for the enrichment program obliges them to keep up with the classwork they missed. There are a variety of School Day Enrichment Programs. In Jerusalem, Kfar Tavor, Beersheva, and Tel Hai there are special centers to accommodate the pupils. In Ashdod, Beit Shemesh, Herzliya, Yavneh, Kfar Saba, Lod, Netanya, Rishon LeZion, Ramla, Raanana, and Shlomi there are centers within the schools (primary or high schools).

The School Day Enrichment Program is designed to answer the needs of gifted pupils within the regular classroom situation. It consists of activities in the sciences, humanities and arts, but the subject matter differs from that studied in school so that the material is not duplicated and students will not be too far advanced in their class subjects.

Some examples of subjects offered include mathematics, chemistry, microbiology, art and drawing, sculpture, graphic design, journalism, creative writing and literature, the art of cinema, geology, zoology, animal behavior, biology, genetics and medicine, architecture, meteorology, photography and computers.



Ofek School, Jerusalem

In addition to preparing homework, the pupils submit final papers. As often as possible, the teachers for these programs come from institutions of higher education, who are both knowledgeable as well as suited to instructing young students (grades 3 - 9).

ENRICHMENT PROGRAMS FOR THE GIFTED IN INSTITUTIONS OF HIGHER EDUCATION

Israel's institutions of higher education were pioneers in establishing enrichment programs for gifted pupils. In the mid-1960's courses were opened for the gifted at the Weizmann Institute and the Technion. Today, in every such institution, that is, in the Weizmann Institute, the Technion, and the Ben Gurion, Bar Ilan, Tel Aviv and Hebrew Universities, there are Enrichment Programs for gifted and science oriented youth. Programs are also conducted by the Zoological Center in Ramat Gan as well as by Beit Berl in Tsofit, by Sapir Regional College in Shaar Haneguv, and by the Tel Hai College in Tel Hai. The pupils are tested by the Szold Institute and from grade 4 and up they are directed to afternoon courses once or twice a week.

The Curriculum

In each institution of higher education a director is appointed to be in charge of the program, and remains in contact with the Department for Gifted Children and Science Oriented Youth in the Ministry of Education and Culture. Each institution selects suitable teachers from amongst the lecturers, instructors and Masters or Ph.D. students who are proficient in a specific field. The teachers suggest a curriculum which is approved by the program director who works in conjunction with an advisory committee. The programs are under constant observation and are assessed by the committee members.

The majority of pupils choose subjects mainly in the sciences and mathematics, and in some locations the humanities and social sciences as well. Examples of the courses studied include aeronautics, electronics, archaeology, biology, zoology, chemistry, science fiction, computers, mathematics, physics, astrophysics, astronomy, psychology, photography, medicine, economics, sociology, law and philosophy. The curriculum includes subjects which are not offered within the formal educational framework, with the aim of enriching the pupils' scope of interest and developing their intellectual and creative talents. Importance is attached to the fact that students who come from different schools in the area can meet in these special courses. Individuals who are often exceptional in their classes come into contact with others of their age who share common interests and abilities.



MUNICIPAL ENRICHMENT PROGRAMS FOR THE GIFTED

In various locations throughout the country, municipalities and local authorities conduct courses in the afternoon hours for gifted pupils. Recommendation for participation is made after testing by the Szold Institute. About 3% of the pupils whose test results are the highest for their age group in a given area are suggested for these programs. Courses are for 3rd or 4th graders, in accordance with the decision of the local educational authorities.

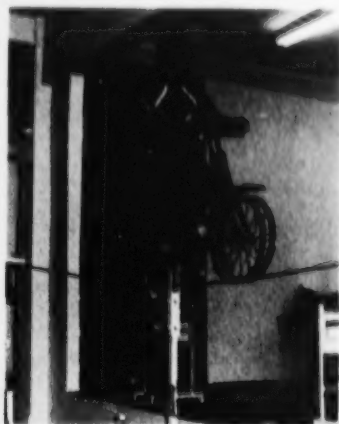
These programs are currently offered in Arad, Ariel, Bat Yam, Gush Etzion, Hadera, Holon, Yehud, Kfar Saba, Kiryat Arba, Lod, Mateh Binyamin, Modiin, Merhavim, Netanya, Nes Ziona, Petach Tikva, Ramla, and Rishon LeZion.

The Curriculum

In each municipality the enrichment program is supervised by a coordinator appointed by the local educational authorities. This coordinator works in conjunction with local professionals as well as the Department for Gifted Children and Science Oriented Youth in the Ministry of Education and Culture. Activities take place once or twice a week in the afternoon, for a period of two hours. Courses are held in high schools which have laboratory facilities.

An attempt is made to integrate subjects from the sciences, humanities, social sciences and art. Some examples of the course offerings include the following: people who changed history, drawing and art, computers, photography, journalism, architecture, maritime civilizations, cinema, theatre, "in the footsteps of an artist," animals and their environment, the world of insects, nature, geology, technology of food, Israel and its antiquities.

Instructors are chosen on the basis of their expertise in the subject as well as their overall approach to teaching young children.



Ron Center, Rishon LeZion

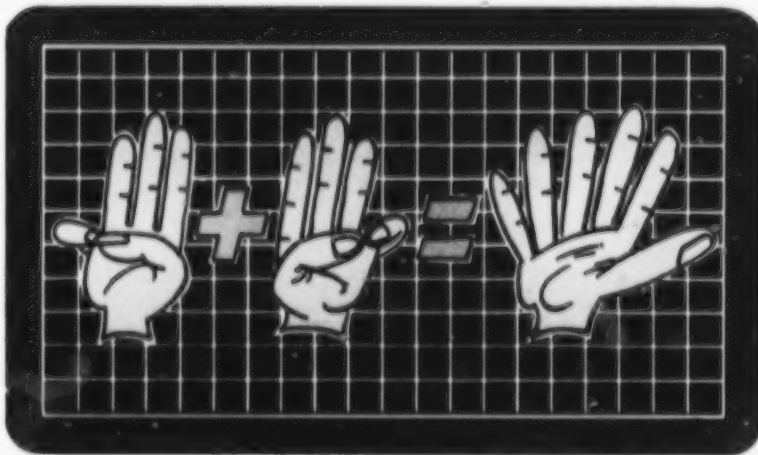


ASSOCIATIONS

There are two associations which conduct courses for gifted children in Israel. These associations, established in the 1960's in Tel Aviv and Jerusalem, are autonomous and are recognized by the Department for Gifted Children and Science Oriented Youth in the Ministry of Education and Culture.

In Jerusalem, the HELED Association conducts courses at the Hebrew University of Jerusalem at the Givat Ram campus. In Tel Aviv, the Young Persons' Institute for the Promotion of Art and Science is located in the Technical College at the Tel Aviv University.

For these programs, the Ministry of Education and Culture recommends the top 3% of children in grade 3 and up who have passed the Szold identification test. The subjects studied are mainly in the sciences, humanities and art. HELED also accepts pupils who have passed the assessment test administered by the Psychological Services of the Jerusalem Municipality. The Young Persons' Institute accepts children who have passed the Institute's own test.

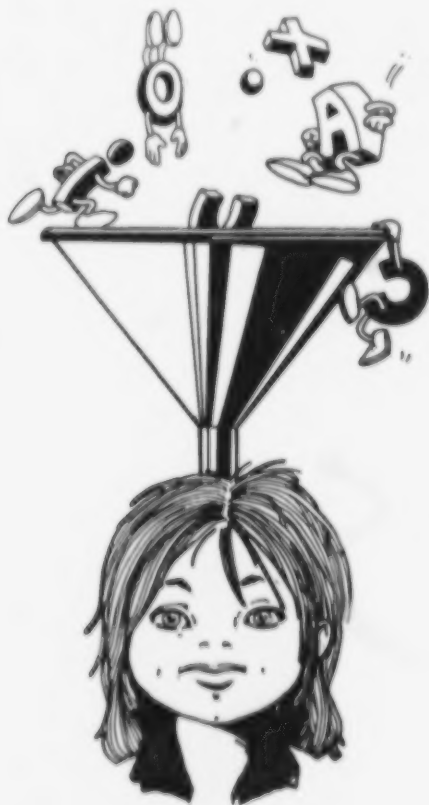


COURSES FOR ARAB AND DRUZE PUPILS

In the early 1980's the Psychological Service in Nazareth, supported by the Ministry of Education and Culture, opened courses for Arab pupils from grade 5 and up who had passed the intelligence test. The course subjects include biochemistry, mathematical reasoning, electronics, "know your city," the basics of health, medicine, etc.

In 1986, enrichment centers were added in the following Arab settlements: Baka el Garbiyah, Uhm el Fachem, Arara and Taibe. The pupils were recommended by the Nazareth Psychological Service. Courses take place in each settlement and for children from Taibe, the enrichment program is held at the Beit Berl College. The courses are under the supervision of the Minister's advisor and Department Director for Arab Education and Culture, with guidance provided by district supervisors for Arab education.

The Druze pupils who were tested and accepted to the program study in Osafia and Dalyat-el-Carmel. The courses are under the supervision of the Minister's advisor in charge of Education and Culture for the Druze school population, and in cooperation with the Department for Gifted Children.



PROGRAMS FOR SCIENCE ORIENTED YOUTH

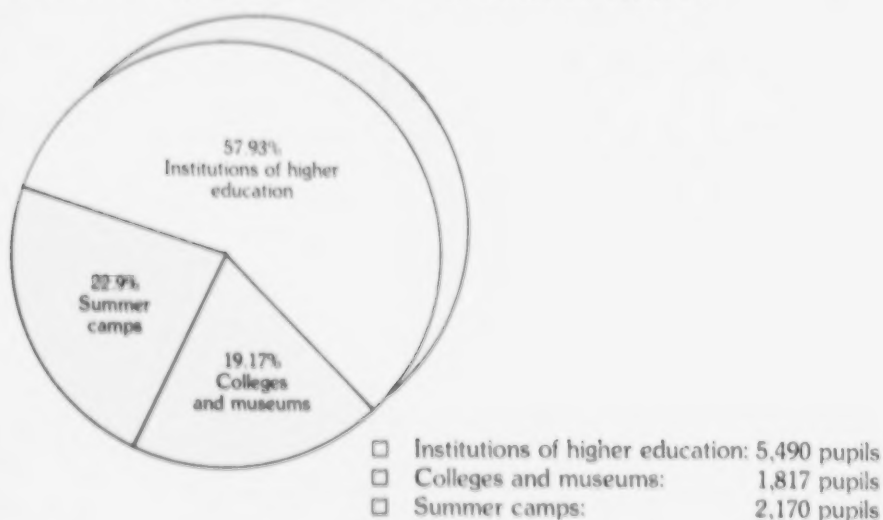
Courses for science oriented youth are offered in institutions of higher education in cooperation with the Committee for the Advancement of Science Education for Youth and the Department for Gifted Children and Science Oriented Youth in the Ministry of Education and Culture. The courses were established for the enrichment and advancement of young students who demonstrate an interest in the sciences.

The Committee is a public body comprised of representatives from the institutions of higher education and from the Ministry of Education and Culture. These representatives direct and coordinate the programs for science oriented youth in each of the respective institutions. Their aim is to outline and guide the ways and means to advance the scientific education of junior and senior high school students in addition to their formal school curriculum. The Committee was established at the initiative of Professor Ephraim Katzir, the Fourth President of the State of Israel.

Science oriented youth programs are extracurricular, held in the afternoon hours in the following institutions: The Weizmann Institute of Science, the Technion — Israel Institute of Technology, the Ben Gurion University of the Negev, the Hebrew University of Jerusalem, the Tel Aviv University, and the Bar Ilan University in Ramat Gan; and in the following colleges: Beit Berl in Tsofit, the P. Sapir Shaar Hanegev College of the Negev, Tel Hai in Tel Hai, and the Technological College in Holon.

The description of the program activities is based upon reports from the course coordinators in the institutions of higher education and colleges. Acceptance of pupils to these courses is made on the basis of their school report cards and a written recommendation from their science teacher. For the most part there is no need for testing as the children attend the courses solely because of their interest in science. Activities are scheduled throughout the year in 25 weekly meetings.

(For information concerning these courses, contact the program coordinator in all the institutions of higher education where they are offered. See p. 36.)



UNIVERSITIES

BAR ILAN UNIVERSITY

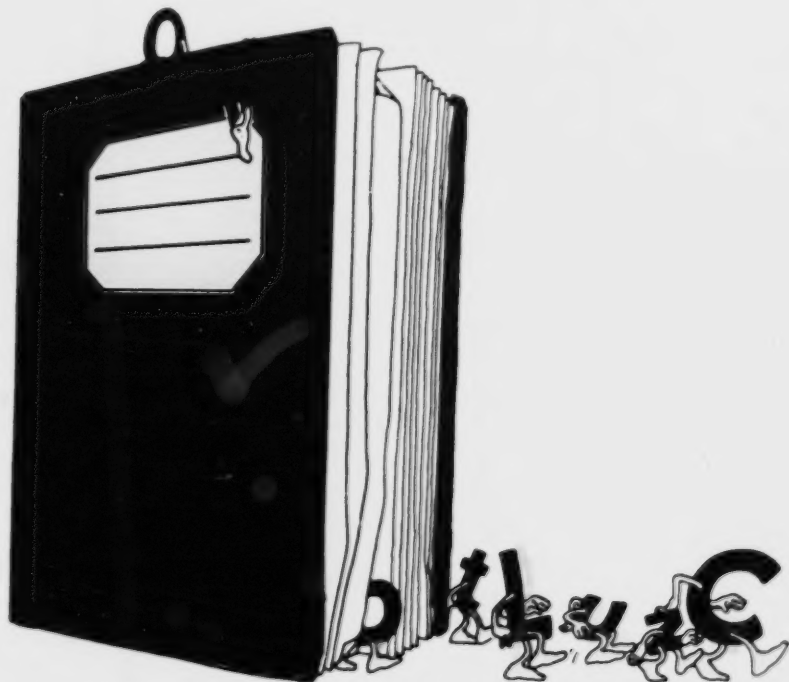
THE UNIT FOR YOUTH ACTIVITIES

At the Bar Ilan University, the Unit for Youth Activities organizes courses in three tracks: courses for gifted children, courses for science oriented youth, and the Ilanot project.

The courses for science oriented youth accept outstanding students from grades 7 through 12, and include subjects such as computers, physics, chemistry, biology, mathematics and psychology.

Each summer a special camp for science oriented youth is organized. The pupils participate in two sessions (one for boys; one for girls), and they study a wide range of subjects in the sciences.

The aim of the University's Ilanot project is to increase cooperation with high schools through a framework of intensive study days. Through lectures and workshops, subjects which particularly arouse the curiosity and interest of the pupils in the areas of research and current science are highlighted. The activity is intended specifically for pupils from senior high schools.

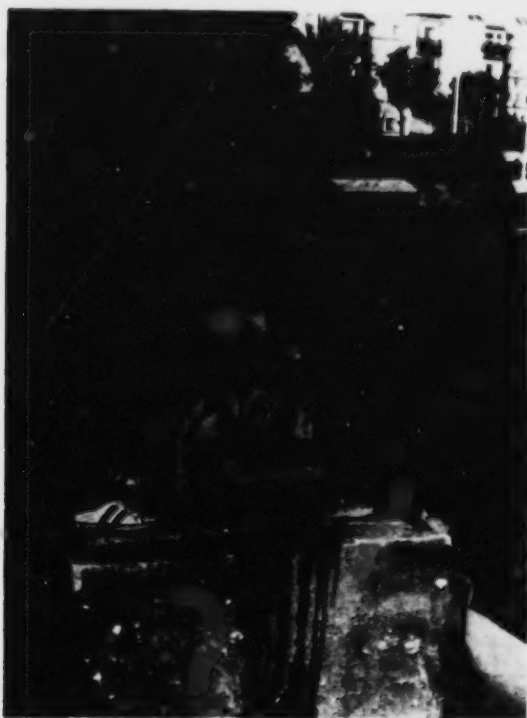


THE BEN GURION UNIVERSITY OF THE NEGEV SCIENCE ORIENTED YOUTH UNIT

There are programs offered by the Ben Gurion University designated specifically for gifted children and science oriented youth. The gifted children are evaluated by the Szold Institute tests. Courses for science oriented youth are attended by pupils from grades 7 through 12 who are highly motivated and are recommended by their respective science teachers. The students choose the various courses based on their particular interests.

The participants come from the Negev district and commute once a week to the Ben Gurion University. Sessions are held for 2 — 3 hours in the afternoon, in 20 meetings during the school year. Subjects offered are from the sciences, social sciences, law, humanities and medicine, and the curriculum is devised in consultation with lecturers from different faculties. Course instructors are generally lecturers in the University and graduate students. In addition, the Science Oriented Youth Unit holds popular lectures in science, physics, chemistry, astrophysics, and astronomy.

During the summer months, the Ben Gurion University organizes a summer camp for science oriented youth. The pupils are offered a wide variety of subjects within the sciences, which enables them to become more familiar with the courses they would like to attend during the school year at the University.



How Printing Began

THE HEBREW UNIVERSITY OF JERUSALEM
THE SCIENCE ORIENTED YOUTH UNIT

The Science Oriented Youth Unit provides afternoon courses for children in grades 7-12 from Jerusalem and the vicinity. Pupils are accepted on the basis of their school report cards, entrance examinations, and an interview by an admissions committee. Most of the courses are in the natural sciences with only a few in the humanities. Instructors are University lecturers and students who are studying for their Masters and Ph.D. degrees. The curriculum is planned with regard to each individual subject and presented for the professional evaluation of the staff within the University's different faculties.

Each summer, camps are held in two sessions for children from grades 6 through 11. The conditions of acceptance require a test, a personal interview, and recommendations from the pupil's school. Each student is accepted to a specific two-week course; the subject matter deals primarily with the natural sciences. There are also camps for children outside of Jerusalem, and these participants attend the camps with full boarding facilities.



An Experiment

THE TECHNION — THE ISRAEL INSTITUTE OF TECHNOLOGY SCIENCE ORIENTED YOUTH CENTER

The Center offers afternoon enrichment courses for gifted pupils and for science oriented youth from grades 7 — 12 who come from schools in the Haifa area and from the Northern educational district. The intention is to provide more in-depth and specialized subject matter, above and beyond the regular school curriculum.

Students choose the courses they wish to study in the sciences and social sciences. The program teachers are lecturers at the Technion and students who are studying for their Masters or Ph.D. degrees.

In the summer months, courses are operated in three camp sessions of two weeks each. Most of the courses given are in the sciences. The camps are structured as day camps with no boarding facilities.



Young Researchers

TEL AVIV UNIVERSITY THE SCIENCE ORIENTED YOUTH UNIT

Courses for science oriented youth take place in the School of Education at the Tel Aviv University. These courses are held during the afternoon hours and are intended for pupils in grades 7 — 12. Students are accepted on the basis of the grades in their school report cards. For English and computer courses, testing is done to ascertain different achievement levels.

Heading the program is an academic chairperson, and working with him or her is a committee whose members are nominated by the head of the School of Education and the deans of other faculties. The instructors are either Masters or Ph.D. students, or university lecturers. The aim of the program is to satisfy the pupils' intellectual curiosity in the different domains of science. During the morning hours some enrichment classes are held which supplement a particular school's or class's curriculum topics. During the year there are scientific lectures given on a variety of issues. In addition, summer courses are offered in the Science Oriented Youth Unit at the University for those students who are interested in extending their interest and knowledge in the sciences.



THE VOLCANI CENTER — AGRICULTURAL RESEARCH AUTHORITY THE SCIENCE ORIENTED YOUTH UNIT

The Agricultural Research Authority and the Science Oriented Youth Unit conduct courses for students interested in biology and agriculture in agricultural schools and kibbutzim throughout the country. The aim of these activities is to broaden the horizons of pupils in the agricultural schools and introduce them to scientific innovations. The subject matter studied in the courses is above high school level and includes recent research and findings not yet taught in the biology and science curriculum in school.

In each group there are approximately 15 — 20 pupils from grades 11 and 12. They are recommended to the course by their teachers, the course coordinator, and instructors. This educational framework enables them to study subjects in far more depth than is possible in their regular classes, and students may work on personal projects as well.

The Institute holds a summer camp for children as well as activities within educational institutions. In addition, researchers from the Institute direct many high school students in agricultural research and in preparing their annual projects, of which some are submitted to The Agricultural Research Authority.



In the Laboratory

THE WEIZMANN INSTITUTE

SCIENCE ORIENTED YOUTH ACTIVITIES

Educational activities for science oriented youth and gifted pupils were initiated at the Weizmann Institute in 1964, by Professor Amos de Shalit of the Physics Department. A number of scientists from the Institute's different faculties joined the program and established summer camps for science oriented youth, a competition of different models prepared by the students, and an olympics in mathematics. Since then, the activities have broadened to encompass many projects aimed at attracting youth to scientific research.

The educational programs are organized with the assistance of researchers and students from the Institute, along with its permanent staff who has an extensive background in the sciences. The Unit is able to make use of the equipment, laboratories and personnel of the Weizmann Institute in implementing its projects. These are intended for gifted youth, science oriented youth, gifted youth from lower socioeconomic levels, and participants for its international summer camps.

Specifically for science oriented youth, the educational program includes:

1. Science courses.
2. A field school.
3. A science garden.
4. Popular lectures on science topics.
5. The Professor Amos de Shalit science workshop for youth.
6. A competition of models, inventions and projects in the natural sciences, technology and mathematics.
7. A physics bulletin for youth, "The Mouth of the Atom," and a national course in physics for children.
8. A national correspondence course in mathematics.
9. Mathematics competitions and olympics.

The courses for science oriented youth in the Weizmann Institute are intended for pupils in grades 7 — 12. For pupils in grades 5 — 6, courses are offered to those who passed an entrance examination. The subjects are presented on different levels in accordance with the age and knowledge of the participants. In the natural sciences, the curriculum is largely based on laboratory work.

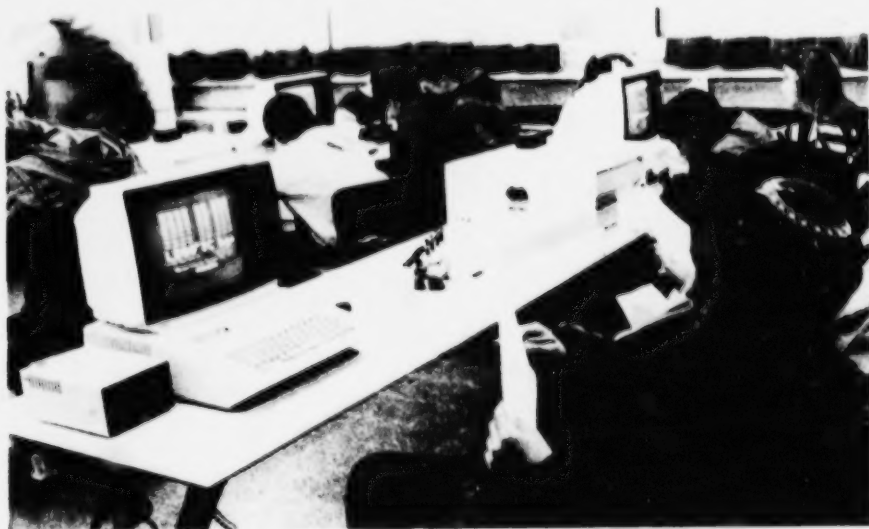
COLLEGES

THE BEIT BERL COLLEGE

The Beit Berl College holds courses for science and art oriented youth. The subjects are varied, such as mathematical thought, probability, astrophysics, astronomy, mathematical quizzes, computers, cross-cultural studies, geography and civics, theatre acting, creative writing, and oral expression.

THE CENTER FOR TECHNOLOGICAL EDUCATION IN HOLON

The Center is an academic institution under the auspices of the Tel Aviv University. It offers courses for science oriented youth with the aim of providing pupils with advanced technological and scientific knowledge. The courses focus on subjects which combine theoretical lectures with practical laboratory work.



Using the Lego Program

THE P. SAPIR REGIONAL COLLEGE OF THE NEGEV, SHAAR HANEDEV

The P. Sapir Regional College of the Negev provides enrichment and creative courses for gifted children in grades 5 and 6, and for science oriented youth in grades 7 through 12. Students come from the surrounding towns and settlements, the local regional council, and from Kiryat Gat.

THE TEL HAI COLLEGE

Tel Hai College is a regional college attended by area residents who come from a variety of settlements. The College offers a School Day Enrichment Program for gifted pupils from the region, as well as courses for science oriented youth.

ADDITIONAL CENTERS (INSTITUTES AND MUSEUMS)

THE BIOLOGICAL INSTITUTE — BEIT PINCUS — HAIFA

Courses for science oriented youth in botany, zoology, and ecology are available at the Biological Institute.

THE OPEN EYE — JERUSALEM SCIENCE CENTER

The Science Center is located on the grounds of the Hebrew University of Jerusalem, Givat Ram, and it conducts courses in light and vision, electricity and magnetism, cyclical processes, the human body, etc.

TECHNODEA — THE NATIONAL MUSEUM OF SCIENCE, PLANNING AND TECHNOLOGY

The Technodea is an association within the Technion campus, located in the Hadar Hacarmel, Haifa. It also operates a branch in Givat Olga.

Within the framework of educational programs for youth and adults operated by the Museum, there are courses and workshops for pupils in various science fields. The goal is to increase the students' interest in the sciences and technology. Workshops are given in chemistry, physics, electricity, magnetism, and the foundations of science.

THE ZOOLOGICAL CENTER — TEL AVIV AND RAMAT GAN

The Zoological Center provides courses for gifted and science oriented youth. As part of the Center, there is an African park, a zoo, the Museum of Man and the Living, and an Educational Center.



Logo Lego

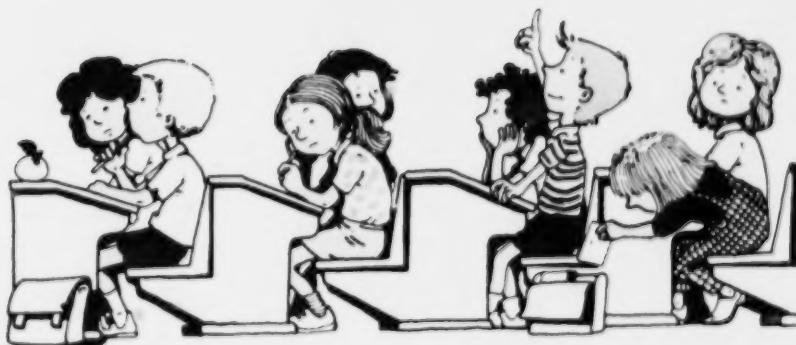
BUDGET

The intensive activities which take place today in the educational framework for gifted and science oriented youth, and their significant expansion in recent years, have been jointly funded by the Ministry of Education and Culture, local authorities and parents of these children. In addition, the Pedagogical Secretariat of the Ministry of Education and Culture supplements with the provision of:

1. Teaching hours for classes and School Day Enrichment Programs.
2. Funds for additional activities and equipment in the institutions of higher education, for programs arranged by the municipalities, and for associations.
3. Funds for the cost of testing conducted by the Szold Institute.

Decisions of the Ministry Executive regarding the budget:

1. The Ministry will direct the allocation of authority and budget responsibilities among governmental bodies and other funding organizations.
2. The various sources in the Ministry that fund the different activities for gifted children will be centralized under the formal budget of The Department for Gifted Children and Science Oriented Youth.
3. Further reviews will be made by the Department for Gifted and Science Oriented Youth as well as by the Budget Department in the Ministry concerning the effectiveness of the different educational programs for the gifted, in order to recommend priorities in the allocation of funds. Such reviews can be made only after receiving detailed information on the total expenditure for education of the gifted.



LOCATIONS OF THE SCIENCE ORIENTED YOUTH PROGRAM

NAME OF INSTITUTION	ADDRESS	TELEPHONE
The Bar Ilan University Ramat Gan	Youth Activities Section Ramat Gan 52100	03/5318207
The Ben Gurion University of the Negev Beersheva	Science Oriented Youth Unit P.O. Box 653 Beersheva 84105	057/461086 057/461087
The Hebrew University of Jerusalem	Science Oriented Youth Unit Givat Ram, Jerusalem 91904	02/585475 02/585346
The Technion — Israel Institute of Technology Haifa	Science Oriented Youth Center Haifa 32000	04/294464 04/225150
The Tel Aviv University School of Education	Science Oriented Youth Unit Ramat Aviv, Tel Aviv 69978	03/423380 03/5450469
The Volcani Center for Agricultural Research, Beit Dagan	Science Oriented Youth Unit P.O. Box 6 Beit Dagan 50250	03/9683358
The Weizmann Institute of Science, Rehovot	Youth Activities Section Rehovot 76100	08/482970 08/483587

COLLEGES

Beit Berl College, Tsofit	Science Oriented Youth Unit Kfar Saba 44905	052/448969 052/25155
Center for Technological Education, Holon	52 Golomb Street, P.O. Box 305 Holon 58102	03/5051181 03/5051182
P. Sapir Regional College of the Negev, Shaar Hanegv Educational Campus	Art & Science Oriented Youth Unit, Hof Ashkelon 79165	051/802770 051/802733
Tel Hai College Rodman Center for Education	Science Oriented Youth Unit Upper Galilee	06/943732 06/943731

ADDITIONAL CENTERS

The Biological Institute Beit Pinhas, Haifa	124 Hatishbi Street Haifa 34455	04/337886 04/337390
The Open Eye Jerusalem Science Center	The Hebrew University of Jerusalem, Givat Ram, 91904	02/584285 02/584227
Technodea — The National Museum of Science & Technology, Haifa	Balfour Street P.O. Box 44927 Haifa 31448	04/671372
Zoological Center Tel Aviv — Ramat Gan	The Krinici National Park Tel Aviv, Ramat Gan 52100	03/775509 03/776181